

A Modern Approach to the Early Diagnosis and Treatment of Chronic Diseases of the Oral Mucosa

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Abstract

Over the past decade, the problem of prevention and treatment of chronic diseases of the oral mucosa has been given considerable attention by domestic and foreign researchers [1, 2, 3, 4, 5, 6, 7, 8]. This is primarily due to an increase in the negative impact of immunosuppressive environmental factors on the human body, the widespread and not always justified use of drugs with antibacterial properties [9, 10, 11, 12, 13, 14]. The results of the analysis of literature data on chronic diseases of the oral mucosa are presented.

Keywords: oral mucosa, diagnosis, treatment, etiology, pathogenesis.

Introduction

Diseases of the oral mucosa are among the main problems of modern dentistry. There is no such organ and tissue where more diseases occur than on the oral mucosa [5]. Diseases of the oral mucosa is a section that requires extensive knowledge from the dentist not only in a narrow specialty, but also knowledge of general clinical disciplines, which is the main thing in the diagnosis and treatment of this category of patients. The list of diseases that manifest themselves in the oral mucosa is quite diverse [6, 7]. In everyday clinical practice, patients who seek dental care with diseases of the oral mucosa (OMD) represent one of the most difficult problems in dentistry due to difficulties in diagnosis and treatment [15]. The problem is further complicated by the fact that, to date, no measures of communal prevention of ORM diseases have been developed [16]. Chronic recurrent aphthous stomatitis (CRAS) is considered one of the most common diseases of the oral mucosa. It has been established that the age of most patients ranges from 20 to 40 years. Before puberty, both sexes are equally often ill, but women predominate among adults (quoted by L.G. Borisenko, 2003). Currently, due to the lack of special epidemiological studies, information on the pathology of the oral mucosa is practically not found in the literature. The etiology and pathogenesis of chronic recurrent aphthous stomatitis have not been fully elucidated. It has been established that a significant role in the pathogenesis of chronic inflammatory processes belongs to the state of microbiocenosis of the oral mucosa [17, 18, 19, 20]. Its participation in the processes of metabolism, the synthesis of vitamins, the formation of the immune status and nonspecific resistance has been proven. The role of gastrointestinal pathology and liver diseases in the pathogenesis of CRAS is evidenced by clinical and experimental data [21, 22]. The issue of the allergic genesis of the disease is widely discussed [23, 24]. It is known that disorders of the immunological status can affect the course and prognosis of chronic diseases of the oral mucosa [25, 26, 27, 28, 29]. Human herpetic infection is currently one of the most common. The herpes simplex virus infects up to 95% of the world's population. The herpes simplex virus is capable of infecting almost all human organs and systems, causing various clinical forms of infection. Among diseases of the oral mucosa, the leading role belongs to the pathology of

herpetic nature. The most frequently diagnosed is acute herpetic stomatitis (AHS), which accounts for 85% of all diseases of the oral mucosa [30]. To date, it is important to study the prevalence of diseases of the oral mucosa, accompanied by erosive-ulcerative and hyperkeratotic lesions, the analysis of the provision of diagnostic methods and therapeutic and preventive measures, which determines the relevance of scientific research. The most common lesions of the human body are dental diseases. A special place among them is occupied by diseases of the oral mucosa. Diseases of the oral mucosa remain one of the urgent problems of therapeutic dentistry [31,32,33,34].

For quite a long time, the epidemiology of diseases of the oral mucosa was in the shadow of large-scale studies of these diseases. One of the largest studies on the epidemiology of more than 70 diseases of the oral mucosa was carried out in the 70s of the last century by the Swedish scientist Dr. T. Axell. These studies made it possible to identify and designate further study of the structure of dental morbidity of the oral mucosa with the participation of the World Health Organization (WHO) [8, 9, 10]. The high prevalence, tendency to progression and the multifaceted impact of adverse environmental factors on the dental system and the body as a whole, as well as ambiguous results of treatment, make it possible to classify inflammatory diseases of the oral mucosa as one of the most pressing problems of modern dentistry. Multicenter studies conducted in 53 countries of the world indicate a high level of spread of the disease of the oral mucosa in the form of white manifestations - candidiasis, leukoplakia, lichen planus 46% [11, 12, 13, 14]. In addition, the relevance of this problem is due to the escalation of environmental troubles that evolve under the influence of multifactorial technogenic pressure, an excess of chemicals in food products, bad habits (smoking, alcohol intake), the prevalence of infectious diseases, immunodeficiency states, allergization of the body, irrational intake of antibacterial agents, active physiological restructuring of the body and psycho-emotional stress. In this regard, the number of diseases of the dental profile is increasing, caused not only by pathogenic, but also by "normal" or conditionally pathogenic microflora, which, under the influence of the above factors, receives a change in typical morphological properties. Normally, the populations of microorganisms present in the oral cavity can be considered as continuously changing self-regulating "living" systems in physiological and morphological terms. All this, with a simultaneous decrease in the levels of local resistance and an increase in psycho-emotional stress, leads to a predisposition to the development of inflammatory periodontal diseases (IDD) and ORD in young people [14, 15, 16, 17]. One of the leading etiological factors in the development of diseases of the oral mucosa is considered to be the microflora of the oral cavity [11, 12, 24, 37, 14]. It is known that the microflora plays an important role in the formation of the pathology of the oral cavity and the occurrence of various somatic diseases [18, 19]. It has been shown that among the bacteria that colonize the human body, there are many microorganisms with a high pathogenicity potential that can cause diseases of various localization or complicate their course [20]. Most diseases of the oral mucosa occur against the background of a violation of microbiocenosis [21, 22]. Among diseases of the oral mucosa, the defeat of the herpes virus occupies a certain specific weight. According to WHO, about 90% of the world's inhabitants are infected with the herpes simplex virus, and 25%-30% of them have clinical manifestations of the disease that are not recognized in time. Chronic recurrent aphthous stomatitis is a widespread worldwide disease, accompanied by the appearance of painful aphthae on the oral mucosa. Data from different studies on the prevalence of CRAS is highly variable (from 5% to 60%) and depends on the studied population, environmental factors and diagnostic criteria [17, 8, 19, 10, 11, 12, 16]. Chronic recurrent aphthous stomatitis affects, according to different authors, from 5 to 50% of the population [14, 15, 19]. In recent years, the number of patients with autoimmune diseases, such as lichen planus, leukoplakia, erythema multiforme, etc., has increased in dental practice. Although these diseases are systemic, they most often manifest themselves locally in the oral cavity. Therefore, dentists can be among the first to diagnose this pathology and start the necessary therapeutic measures in a timely manner, involving other specialists in the work. Pemphigus is one of these autoimmune diseases. The disease has a long chronic course with remissions of varying severity and duration. The development of this pathology can be triggered by infectious, viral, chronic somatic diseases, periodontitis, as well as food and drug poisoning and occupational hazards.

Leukoplakia is one of the varieties of keratoses characterized by a chronic course and affecting the mucous membrane of the oral cavity and the red border of the lips. The factors leading to the development of leukoplakia are polyetiological. These are smoking, injuries of mechanical, chemical, thermal genesis, genetic predisposition. At the same time, a link between leukoplakia and chronic candidal infection and diseases of the gastrointestinal tract was revealed [18, 25]. Leukoplakia is characterized by the presence of foci of hyperkeratosis with symptoms of chronic inflammation in areas that are not normally subjected to keratinization [26]. It is generally recognized that leukoplakia belongs to precancers as long-term atrophic-degenerative proliferative tissue changes of a non-specific nature.

Aphthous lesions of the oral mucosa are found in both adults and children, more often in women. Long-term course, periodic exacerbations, accompanied by severe pain syndrome and worsening the quality of life of patients, together with a variety of existing theories of the onset and mechanisms of the development of the disease, indicate the need to search for new approaches to the treatment of CRAS [29, 30]. Recently, there has been an increase in the number of inflammatory diseases of the oral mucosa [31]. This is due to both an increase in the number of adverse factors affecting the body (deterioration of the environmental situation, chronic stress) and a decrease in the standard of living [22]. Actually, diseases of the oral mucosa are caused by various etiological factors, and the peculiarities of the structure and functioning of the oral cavity create conditions for the impact on the mucous membrane of traumatic factors, pathogens or viruses [23, 24, 25]. At the same time, the severity and prevalence of the disease is determined by the nature of the etiological factor and the intensity of aggression. In the case when the aggressiveness of the factor is insignificant, the body reacts by mobilizing a complex of nonspecific defense reactions and the disease does not occur. Despite the variety of etiological factors of influence, there are common patterns in the development of the pathological process. Erosive and ulcerative diseases of the oral mucosa are sources of constant discomfort associated with pain, which complicates a full meal, communication with others and thereby significantly reduces the quality of life. Some of them, especially chronically and permanently proceeding with the phenomena of pronounced inflammation and tissue destruction, contribute to the formation of chronic foci of intoxication and sensitization [28]. With incorrect diagnosis and the absence of timely rational therapeutic measures, the disease often recurs, the course becomes prolonged and severe, causing various complications in the body, up to chronic virogenic sensitization and intoxication [29], which subsequently leads to the occurrence of autoimmune diseases such as pemphigus and lichen planus. If it was previously believed that diseases of the oral mucosa are a local process and the approach to their treatment and prevention was carried out only from a local point of view, now they are considered inextricably linked with the body as a whole. The mucous membrane of the oral cavity can reflect metabolic disorders, the pathology of individual organs and body systems. Changes in the oral mucosa can be strictly specific, when the appearance of the mucous membrane can be used to establish a diagnosis and determine the tactics of treatment. However, in most cases, the diagnosis of diseases that manifest on the mucous membrane is difficult, since the clinical picture is nonspecific and often aggravated by additional unfavorable local (insufficient hygiene care, trauma, secondary infection) and general (hypovitaminosis, somatic pathology) factors. Diagnosis of these diseases is complicated by the lack of clear ideas about their etiology and pathogenesis, significant clinical similarity of these diseases, as well as the presence of various manifestations of pathological changes [21, 22, 23, 24]. At the same time, the clinical picture of the course of many diseases of the oral mucosa, which has changed in recent years, also makes it difficult to diagnose. Often, the appearance of primary morphological elements on the oral mucosa can be the first symptom that appears long before the general clinical symptoms of the underlying disease, pathology, even before its objective symptoms occur, and patients can seek help first of all in dental institutions. Chronic diseases of the oral mucosa are manifested by functional disorders that can lead to anatomical changes in the tissues of the oral cavity. Edema, erosion, atrophy, hyperplasia, sclerosis of the oral mucosa, manifested by primary and secondary elements on the mucous membrane of the cheeks, palate, tongue, gums and in the corners of the mouth, create unfavorable conditions for the use of dentures, fixation of orthopedic structures and hygienic care. ORM diseases, and especially those accompanied by aphthous eruptions and erosive ulcerative lesions, are a

fairly common dental pathology, which affects from 8 to 60% of the population and represents a serious problem [13, 14, 15]. Such diseases include lichen planus, aphthous stomatitis. They are characterized by torpidity of the course, polymorphism of clinical manifestations, complexity of diagnosis, and low effectiveness of treatment [10, 17]. In recent years, there has been a tendency to increase and develop complications in these diseases. This puts the problem of treating inflammatory diseases of the oral mucosa among the most complex and important tasks of modern dentistry. The most studied and scientifically substantiated is the immune theory associated with disorders of local and general cellular and humoral immunity [15,17,18]. The conducted immunological studies of OMSS confirm that the development of aphthous elements is associated with circulating immune complexes, where antigens are microorganisms or cells of the mucous membrane itself, and antibodies are immunoglobulins [10,11]. In the structure of OM diseases, lichen planus is from 2 to 17% [12,13,14,15], and as an isolated lesion of only the oral mucosa occurs in 70-75% [16,17]. Pemphigus can be benign (non-acantholic) or true (acantholic). Acantholytic pemphigus is a serious disease characterized by the formation of blisters on the skin, as well as on the mucous membrane: oral cavity, nose, pharynx, larynx, conjunctiva of the eye, in the gastrointestinal tract (esophagus, stomach, large intestine), on the mucous membrane of the bladder and genital organs (cervix, urethra). In this case, damage to the central nervous system is possible [18]. Leukoplakia are white formations in the form of spots or plaques that are not scraped off by the instrument during examination; they differ in size, shape, and texture on palpation [19, 12]. To diagnose leukoplakia, it is necessary to have a clear idea of the effect of causal factors on the oral mucosa, taking into account the localization of lesions, while taking into account changes in both the structural features of the oral mucosa and physiological processes. The physiological process of keratinization (desquamation of the surface cells of the epithelium of the oral mucosa), as a rule, is expressed unevenly. In response to various types of irritants, the oral mucosa, due to the pronounced granular layer in the composition of the stratified keratinizing epithelium, is capable of forming and accumulating keratin, which leads to a thickening of the whitish epithelium (tissue keratinization intensifies) [21]. At the same time, in areas of non-keratinized epithelium with a pronounced submucosal layer, under the influence of constant trauma, desquamation of the surface layers increases, and this also leads to disruption of the keratinization process. In both cases, we are talking about a keratotic type of inflammation due to a violation of the keratinization process - leukoplakia is clinically diagnosed in the form of white non-scraping mucosal lesions [20]. Erythema multiforme exudative OM is a complex multifactorial acute inflammatory disease characterized by polymorphic rashes on the oral mucosa, genital organs and skin, prone to relapse. MEE is based on such significant etiopathogenic components as the patient's genetic characteristics, exposure to environmental factors, inflammatory and immune-inflammatory reactions, sensitization (toxic-allergic and infectious-allergic forms), as well as dysbiotic disorders in the body [22,23]. The effectiveness of the organization of dental care and its planning depend on the study of the structure of the incidence of the oral mucosa depending on sex and gender characteristics [24]. Treatment of diseases of the oral mucosa and prevention of their recurrence present significant difficulties and are often ineffective [31, 32, 33, 34]. It should be noted that an increase in the number of relapses contributes to the transition of the disease to more severe forms, which are subsequently difficult to treat. In this regard, the prevention of recurrence of diseases of the oral mucosa is considered not only as a dental problem, but also as part of a comprehensive system of human health improvement [24, 15, 10, 12]. Therefore, pathogenetic approaches to the prevention of relapses based on a deep knowledge of the mechanisms of development of pathological processes should be applied [10, 16, 27]. Based on the data on the mechanisms of development of the pathological process in the oral mucosa, the main provisions of the strategy of therapeutic and preventive measures necessary to prevent or reduce the intensity of the course of the pathological process are formed. A particular problem is the treatment of diseases of the oral mucosa, accompanied by the development of erosive and ulcerative elements of the lesion and characterized by a chronic or recurrent course. Such diseases include some forms of lichen planus and chronic recurrent aphthous stomatitis. The development of these diseases is accompanied by an inflammatory response of the mucous membrane, significant pain and torpidity of the course,

polymorphism of clinical manifestations and low treatment efficiency, as evidenced by numerous studies [28, 29]. In the modern specialized literature, the issues of improving the conservative, medical, or less often physiotherapeutic treatment of diseases of the oral mucosa are more often discussed [33]. According to the literature, in patients with complete removable lamellar dentures, diseases of the oral mucosa are detected 3.3 times more often than in patients with preserved dentition in both jaws [34]. The ultimate goal of complex conservative and prosthetic treatment of patients should be to improve the quality of life of a patient with chronic pathology of the oral mucosa [35]. The epithelium of the oral mucosa is a traditional object of cytological studies, which make it possible to detect the development of precancerous processes, impaired cell differentiation, and infectious lesions [26]. The epithelium of the oral mucosa serves as the most important barrier to the entry of antigens, allergens and carcinogens into the body, as well as the area of probable introduction of microorganisms [27,28]. A high oral cavity protection effect is provided by the immune system, which includes specific and nonspecific, cellular and humoral factors that function in close relationship. In the study of protection factors in oral swabs, great importance is attached to neutrophilic granulocytes - NG. Local immunity, which reflects the general immunological reactivity at the level of OM, is also manifested by the production of antibodies [17]. Chronic diseases of the oral mucosa are accompanied by significant changes in the microflora, which are in the nature of dysbiosis. These data may confirm the weakening of the functional activity of local protective factors in such patients.

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